

Conference Abstract

Enabling Digital Specimen and Extended Specimen Concepts in Current Tools and Services

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Abstract

Digital specimens (Hardisty 2018, Hardisty 2020) are the cyberspace equivalent to objects in a physical, often museum-based collection. They consist of references to data and metadata related to the collection object. Through the ongoing process of digitizing legacy data, gaining knowledge from new field collections or research, and annotating and linking to related resources, a digital specimen can evolve independently from the original physical object. Especially the provenance records cannot always be assigned to the physical object when the knowledge was gained solely from the digital representation.

A physical specimen can also be understood as a physical preparation (or a set of multiple preparations, e.g. DNA samples taken from a preserved organism) accompanied by related digital and non-digital data sources (e.g. images, descriptions in fieldbooks, research data) rather than just a single object. This concept of an *extended specimen* has been described by Webster (2017) and is used in the initiative *The Extended Specimen Network* (Lendemer et al. 2019) to enhance the access and research potential of specimens.

Digital specimens need to reflect both, eventual complexity of the physical object (extended specimen) and the knowledge gained from and linked to the digital object itself. In order to provide, track and make use of the digital specimens, the community of collection-holding institutions might need to think of digital specimens as standalone virtual collections that emanate from physical collections. Additionally, new versions of a digital specimen continuously derive from changes of the physical specimen as the (meta)data are being updated in collection management systems to document the state and treatment

of the physical objects. Consequently, there is a challenge to enable the management of both: linked digital specimens in the World Wide Web and the local data of physical specimens in databases of collection-holding institutions and other tools and services.

In this panel discussion, central questions about the requirements, obstacles and opportunities of implementing the concepts of digital specimens and extended specimens in software tools like collection management systems are discussed. The aim is to identify the major tasks and priorities regarding the transformation of tools and services from multiple perspectives: local collection data management, international data infrastructures like the Distributed System of Scientific Collections (DiSSCo) and the Global Biodiversity Information Facility (GBIF), and data usage outside of domain-specific subject areas.

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References

- Hardisty A (2018) Widening access to European natural science collections with Digital Specimens and Natural Science Identifiers (NSId). <https://alexhardisty.wordpress.com/2018/11/29/widening-access-to-european-natural-science-collections-with-digital-specimens-and-natural-science-identifiers-nsid/>. Accessed on: 2020-9-11.
- Hardisty A (2020) What is a Digital Specimen? <https://dissco.tech/2020/03/31/what-is-a-digital-specimen/>. Accessed on: 2020-9-11.
- Lendemer J, Thiers B, Monfils AK, Zaspel J, Ellwood ER, Bentley A, LeVan K, Bates J, Jennings D, Contreras D, Lagomarsino L, Mabey P, Ford LS, Guralnick R, Gropp RE, Revelez M, Cobb N, Seltsmann K, Aime MC (2019) The Extended Specimen Network: A Strategy to Enhance US Biodiversity Collections, Promote Research and Education. *BioScience* 70 (1): 23-30. <https://doi.org/10.1093/biosci/biz140>
- Webster M (Ed.) (2017) *The Extended Specimen- Emerging Frontiers in Collections-Based Ornithological Research*. CRC Press, 240 pp. [ISBN 9781498729154]